

## **REMARKS**

### **I. Status of the Claims**

Claims 18-20 and 57-59 were pending in this application. Claims 18-20 and 57-59 have been rejected. With this paper, Applicant has added claims 60-67 and cancelled claim 59 without prejudice or disclaimer. Therefore, claims 18-20, 57-58, and 60-67 are pending. Reconsideration of the application based on the arguments submitted below is respectfully requested.

### **II. Claim Rejections under 35 U.S.C. § 102**

Claims 18, 57 and 59 stand rejected under 35. U.S.C. §102(b) as being anticipated by Zhao et al. (U.S. Patent No. 6,423,764). Claim 59 has been cancelled. Applicant respectfully traverses the rejection.

In illustrating how Zhao cannot be used as a reference under 35 U.S.C. §102(b), it would be helpful to show what Zhao does and does not include within its disclosure.

Zhao incorporates colouring agents into polyester plastics, prior to extrusion of the polyester plastics. Zhao seeks to produce substantially uniform colouration. It will achieve this, throughout the bulk of the polyester plastics, because it melt-processes the plastics material, after colour has been added. As a result, an article

produced from the polyester plastics containing the colouring material of Zhao, will include colouring material throughout the bulk of the article – that is, the density of colour will be consistent, throughout the bulk of the product; and the colour of inside and outside surfaces of the product will be identical. The entirety of the article will be of the same colour.

In contrast, in accordance with the present invention as expressed in claim 18, an existing container or container preform is post-treated with one or more disperse dyes in a liquid medium to cause binding of dye to the container or container preform. The process will not produce uniform colour throughout the bulk of the polyester from which the container or container preform is made; and, in any event, it will be appreciated that a product produced by melt-processing a mixture of polyester plastics and colouring agent will inevitably be different compared to a product produced by contacting polyester with a disperse dye in a liquid medium.

In melt-processing, a colouring material will be intermingled with polymer chains in a manner which is different to that which results from migration of a disperse dye from a liquid medium into polyethylene terephthalate. There will be clear differences between articles produced by following Zhao and articles produced in accordance with the present invention as expressed in claim 1.

As such, the products of Zhao do not possess the characteristics of Applicant's claimed product. As stated in MPEP 2113 “[t]he structure implied by the process steps should be considered when assessing the patentability of product-by-process claims over the prior art, especially where the product can only be defined by the process steps by which the product is made, or where the manufacturing process steps would be expected to impart distinctive structural characteristics to the final product.” See, e.g., *In re Garnero*, 412 F.2d 276, 279, 162 USPQ 221, 223 (CCPA 1979). The above discussion illustrates the distinctive structural characteristics which result in the different colouring of Zhao and the invention of the above-captioned application.

Withdrawal of the Section 102 rejection is thus solicited.

### **III. Claim Rejections under 35 U.S.C. § 103**

Claims 18-20 and 57-59 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Luka et al. (U.S. Patent No. 6,393,803) in view of Zhao et al. (U.S. Patent No. 6,423,764). Applicant respectfully disagrees with this rejection and requests that this rejection be withdrawn.

Applicant would like to respectfully point out that the Federal Circuit has repeatedly recognized that proceeding in a manner contrary to the accepted wisdom

in the art represents “strong evidence of unobviousness.” Ruiz v. A.B. Chance Co., 234 F.3d 654, 668 (Fed. Cir. 2000); In re Hedges, 783 F.2d 1038, 1041 (Fed. Cir. 1986); W.L. Gore & Assoc., Inc. v. Garlock, Inc., 721 F.2d 1540, 1552 (Fed. Cir. 1983). Furthermore, in order to properly establish a *prima facie* case for obviousness, “at least some degree of predictability is required.” MPEP. § 2142.02.

Applicant appreciates that the Office acknowledges that Luka does not specifically disclose that the colorant has a chemical affinity for polyethylene terephthalate. Applicant would like to further point out that Luka does not disclose the specific, advantageous, disperse dyes (a particular class of dyes) described in accordance with the present invention.

The Office suggests that Zhao makes up for the short-fall in Luka and provides “a disperse dye having a chemical affinity for polyethylene terephthalate...”. Applicant respectfully disagrees as Zhao does not disclose that the dyes described have a chemical affinity for polyethylene terephthalate. Furthermore, in fact, whilst in accordance with the present invention of the above-captioned application, the disperse dyes need to have a chemical affinity for polyethylene terephthalate so that they can migrate from the liquid medium and bind to the polyethylene terephthalate. This is not the case with Zhao.

Zhao discloses a thermal process for intimately mixing polymer and colouring

agent, for example dye. It will be appreciated that colouring agents need have no affinity for polymers to be able to be intimately mixed with one another. In fact, often additives are incorporated into polymers wherein there is no affinity between the additive and the polymer. For example, additive and polymers could be immiscible. Nonetheless, it is possible to incorporate such additives into such polymers because of the use of melt-processing and mixing of the additive into the polymer. Such incorporation is very significantly different compared to the migration required in accordance with the present invention.

Furthermore, the Office suggests that Zhao discloses that the “poly(oxyalkene) polymeric colorant comprising anthraquinone provides effective and stable colorations to thermoplastic resins, is easily handled and exhibits desirable migration properties (C4/66-C5/L2)”. We respectfully submit the Office, in suggesting that Zhao discloses “desirable migration properties” is taking Zhao out of context and viewing the document with hindsight. Zhao does not describe migration from a liquid medium in the manner described in accordance with the present invention. Given that Zhao melt-processes polymer and colouring material, it is clear that it does not incorporate colorant by migration in the manner of the present invention. Melt-processing on the one hand and migration from a liquid medium into a solid polymer on the other hand are incomparable processes.

The Office asserts that “Luka and Zhao are analogous... because both teach about polyethylene terephthalate containers as comprising a colorant”. The Office then argues that it would be obvious “to one of ordinary skill in the art at the time the invention was made to use the poly(oxyalkene) polymeric colorant comprising anthraquinone of Zhao as the colorant for coating the bottle of Luka to provide a bottle with a colorant that provides effective and stable coloration, is easily handled and exhibits desirable migration properties”. Applicant disagrees. If a skilled person was faced with the problem of how to choose an alternative colorant, based on Luka, he would not select the material of Zhao. This is because Zhao teaches that to incorporate the colorant, it should be melt-processed. Clearly, melt-processing is a relatively intense process, requiring complex equipment and careful operating conditions. There is no teaching in Zhao to suggest that any colouring material described in Zhao could be provided in a liquid medium and contacted with a polyethylene terephthalate container or container preform to produce a coloured article. There is no motivation for a skilled person to select the colouring material of Zhao which is melt-processed to incorporate it into polyethylene terephthalate, and use it in a process which involves incorporating a disperse dye into a liquid medium and then contacting an article with the liquid medium, to cause migration of disperse dye into the polyethylene terephthalate of the article.

Whilst Zhao does refer to migration in some places, it is not clear exactly what it is intended to mean, given that Zhao is concerned with melt-processing. It

may be that Zhao is talking about migration during melt-processing; that it, migration and/or ease of mixing within a melted polymer. Such migration is completely irrelevant to any migration of a disperse dye from a liquid medium since, when the polyethylene terephthalate of the container or container preform of the present invention is contacted with the liquid medium, it is not molten and/or it is not being subjected to the harsh conditions associated with melt-processing.

Zhao teaches the use of certain dyes which include poly(oxyalkene) polymeric components. These materials are liquid under ambient conditions and are used as liquids, when incorporated into molten polyethylene terephthalate. Zhao selects suitable polymeric dyes and incorporates them into polyethylene terephthalate, to avoid the intrinsic viscosity (molecular weight) of the coloured polymer falling, due to incorporation of the additive during the melt-processing. Thus, the additives of Zhao are selected on the basis of their ability not to reduce the intrinsic viscosity significantly, during melt-processing. This property is irrelevant to the present invention, since, in accordance with the present invention, disperse dyes migrate from a liquid medium, and are not incorporated during melt-processing.

The new claims, claims 60-67, further distinguish the present invention. Furthermore, the process claims, which are dependent upon the article claims, also highlight differences between the present invention and the prior art. It would not be obvious for a skilled person to use the process as described in claim 65, on the

basis of a combination of Luka and Zhao. There is simply no motivation for a skilled person to arbitrarily select certain dyes from Zhao, when such dyes are advocated as facilitating maintenance of intrinsic viscosity. Furthermore, there is no disclosure that such dyes may be used to colour containers or container preforms by contacting a liquid medium containing the disperse dyes with the container or container preform and allowing the disperse dye to migrate. Zhao includes absolutely no teaching that the dyes disclosed therein may function in this way.

Yet furthermore, Zhao can also be considered a reference that teaches away from the invention of the above-captioned application as one would be unable to develop the objectives of Applicant's invention from Zhao's disclosure. As the Federal Circuit has stated, "a reference will teach away when it suggests that the developments flowing from its disclosures are unlikely to produce the objective of the applicant's invention." *Syntex LLC v. Apotex, Inc.*, 407 F.3d 1371 (Fed. Cir. 2005).

For the above reasons, withdrawal of the Section 103 rejection is thus solicited.

### **Conclusion**

Accordingly, Applicant believes that all of the pending claims are in condition for allowance and respectfully requests a favorable action to that effect.

Applicant has commented on some of the distinctions between the cited references and the claims to facilitate a better understanding of the present invention. This discussion is not exhaustive of the facets of the invention, and Applicant hereby reserves the right to present additional distinctions as appropriate. Furthermore, while these remarks may employ shortened, more specific, or variant descriptions of some of the claim language, Applicant respectfully notes that these remarks are not to be used to create implied limitations in the claims and only the actual wording of the claims should be considered against these references.

The Commissioner is authorized to charge any deficiency or credit any overpayment associated with the filing of this Amendment and Response to Deposit Account 23-0035.

Respectfully submitted,

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